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Great Lakes, Great Potential: Examining the Regulatory Framework for Wind Farms in the Great Lakes

Katherine Saks

GREAT LAKES, GREAT POTENTIAL: EXAMINING THE REGULATORY FRAMEWORK FOR WIND FARMS IN THE GREAT LAKES

Katherine Saks[†]

INTRODUCTION

The United States currently faces an economic crisis that demands new solutions to a nationwide problem. Our nation's leadership has turned to sustainable energy as a potential solution to the twin dilemmas of rising unemployment and United States dependency on foreign energy importation. President Barack Obama recently emphasized the need for clean, inexpensive energy during a speech at the United Nations, stating that "[w]e are making our government's largest ever investment in renewable energy—an investment aimed at doubling the generating capacity from wind and other renewable resources in three years."[1]

Wind energy generally has greater benefits over traditional methods of energy generation, including the following: avoiding air pollution, reducing water usage, maintaining stable pricing that is "not subject to fuel volatility," stimulating local economies, creating jobs supporting wind development, and potentially reducing fuel prices and stabilizing electricity rates.[2] While only land-based wind farms currently exist in the United States,[3] offshore wind farms present the opportunity to harness clean energy with the "economic potential for cost competitiveness that would allow them to make a large

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[1] Barack Obama, President of the U.S., Remarks by the President at United Nations Secretary General Ban Ki-Moon's Climate Change Summit (Sept. 22, 2009), *available at* http://www.un.org/wcm/webdav/site/climatechange/shared/Documents/USA.pdf.

[2] U.S. DEP'T OF ENERGY, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY'S CONTRIBUTION TO U.S. ELECTRICITY SUPPLY 13 (2008), http://www1.eere.energy.gov/windandhydro/pdfs/41869.pdf (discussing projected impacts from a scenario where wind energy generates twenty percent of the United States' electricity by 2030).

[3] *See generally* Cape Wind, America's First Offshore Wind Farm on Nantucket Sound, http://www.capewind.org/article24.htm (last visited Oct. 17, 2009) (explaining that Cape Wind would be America's first offshore wind farm).

impact in meeting the future energy needs of the United States."[4] In addition, factors such as higher offshore wind speeds, steadier wind, and the ability to construct larger turbines give the offshore wind industry the potential to produce more energy than onshore turbines.[5]

The offshore wind project furthest into its development, the Cape Wind Energy Project (hereinafter Cape Wind), has faced strong public opposition, including concerns over obstruction of scenic beach views.[6] Notwithstanding delays, Cape Wind is progressing towards construction, recently receiving approval from the U.S. Interior Secretary.[7] Cape Wind's permitting approval may encourage wind development across the nation, including proposed wind farms in the Great Lakes.[8]

Constructing wind turbines in the Great Lakes raises many issues, including environmental concerns,[9] such as impacts on local wildlife,[10] as well as construction[11] and safety[12] issues. While much of the attention surrounding

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[4] U.S. DEP'T OF ENERGY, *supra* note 2, at 48.

[5] *See* American Wind Energy Association, Offshore Wind Energy Fact Sheet, http://www.awea.org/pubs/factsheets/Offshore_fact_sheet.pdf (last visited Sept. 23, 2009).

[6] *See generally* Save Our Sound: Alliance to Protect Nantucket Sound, http://www.saveoursound.org (last visited Oct. 17, 2009) (nonprofit organization that opposes the proposed wind farm in Nantucket Sound); *see also* Rome Neal, *Storm Over Mass. Windmill Plan: Plan for Nantucket Sound Wind Farm Raises Debate*, CBS NEWS, June 29, 2003, http://www.cbsnews.com/stories/2003/06/26/sunday/main560595.shtml (discussing opposition to Cape Wind, including concerns over visibility, money, the environment, and developers taking advantage of laws).

[7] *See* Katharine Q. Seelye, *Big Wind Farm off Cape Cod Gets Approval*, N.Y. TIMES, Apr. 29, 2010, at A01.

[8] *See* Jim Tankersley & Bob Drogin, *Pioneering Mass. Wind Plan OK'd; Decision Boosts Sites in Atlantic, Gulf, Great Lakes*, CHI. TRIB., Apr. 29, 2010, at C14.

[9] Constructing wind farms on the Great Lakes implicates five federal statutes: the Clean Water Act, the Endangered Species Act, the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and the National Environmental Policy Act. *See generally* 16 U.S.C. §§ 668-668(d) (2006); 16 U.S.C. § 703 (2006); 16 U.S.C. § 1536 (2006); 33 U.S.C § 1344 (2006); 42 U.S.C. § 4332 (2006).

[10] Wind turbines have caused bird fatalities; however, the occurrence of these fatalities outside of California is low. *See* GOVERNMENT ACCOUNTABILITY OFFICE, WIND POWER: IMPACTS ON WILDLIFE AND GOVERNMENT RESPONSIBILITIES FOR REGULATING DEVELOPMENT AND PROTECTING WILDLIFE 14 (2005), *available at* http://www.gao.gov/new.items/d05906.pdf.

[11] Obstacles to offshore wind turbine construction include waves, severe weather, and the corrosive effects of the marine environment. *See* Adam M. Dinnell & Adam J. Russ, *The Legal Hurdles to Developing Wind Power as an Alternative Energy Source in the United States: Creative and Comparative Solutions*, 27 NW. J. INT'L L. & BUS. 535, 544 (2007). Furthermore, the cost of building turbines increases as water depth and wave heights increase. *See* American Wind Energy Association, Offshore Wind, http://www.awea.org/faq/wwt_offshore.html (last visited Oct. 17, 2009).

[12] Offshore wind turbines could pose navigational safety issues on the Great Lakes. The United States Coast Guard found that wind turbines in Cape Sound could pose hazards to mariners including "the proximity of the wind farm to shipping lanes, hazards to fishing ves-

the construction of offshore wind farms targets environmental and aesthetic concerns, a neglected area is the statutory and regulatory regimes governing the permitting and approval of the initial construction.

This note explores the possibility of constructing wind turbines in the Great Lakes, through the lens of Ohio law, and proposes a regulatory solution for constructing the turbines in Lake Erie. Part I examines the challenges confronting Cape Wind. Part II identifies the federal agencies that have potential jurisdiction over offshore permitting in the Great Lakes. Part III addresses the role of Great Lakes states in permitting wind turbines. Part IV examines the Great Lakes governance structure and the stakeholders that have interests in the area. Part V discusses Ohio's current statutory efforts regarding potential wind turbines in Lake Erie. Part VI analyzes possible solutions to this regulatory quandary and proposes a harmonized approach to regulation that combines regulation at both the state and federal levels.

I. BACKGROUND

Cape Wind revealed that Congress had not granted any specific federal agency regulatory authority over permitting offshore wind turbines on the Outer Continental Shelf (OCS).[13] The United States Army Corps of Engineers (USACE) generally serves as the permitting authority for all waters of the United States, including the construction of wind turbines in Nantucket Sound, part of the OCS.[14] In 2001, Cape Wind Associates, LLC applied for a permit with the USACE to build an offshore wind farm on Horseshoe Shoal in Nantucket Sound, Massachusetts.[15] Subsequently, the USACE determined that it needed to prepare an environmental impact statement (EIS) for this project.[16]

In 2005, while the USACE was preparing the EIS, Congress passed the Energy Policy Act of 2005 (hereinafter Energy Policy Act) granting the Department of the Interior (DOI) jurisdiction over permitting wind farms on the

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sels when navigating with gear and nets extended, marking and labeling the wind towers in accordance with standard aids to navigation policy, and the impact of ice build up on the turbines." Press Release, U.S. Coast Guard First Dist., Coast Guard Shares Finding of Cape Wind Radar Study (Dec. 5, 2008), *available at* http://www.piersystem.com/go/doc/778/243876/.

[13] *See* U.S. DEP'T OF THE INTERIOR, MINERALS MGMT. SERV., CAPE WIND ENERGY PROJECT, FINAL ENVIRONMENTAL IMPACT STATEMENT E-4 (2009), *available at* http://www.mms.gov/offshore/AlternativeEnergy/PDFs/FEIS/Cape%20Wind%20Energy%20Project%20FEIS.pdf.

[14] *See id.* "The Outer Continental Shelf (OCS) consists of the submerged lands, subsoil, and seabed, lying between the seaward extent of the States' jurisdiction and the seaward extent of Federal jurisdiction." MMS, What Is the Outer Continental Shelf?, http://www.gomr.mms.gov/homepg/whoismms/whatsocs.html (last visited Jan. 21, 2009).

[15] *See* U.S. DEP'T OF THE INTERIOR, MINERALS MGMT. SERV., *supra* note 13.

[16] *See id.*

OCS.[17] The Energy Policy Act specifically granted the DOI jurisdiction to grant leases, easements, and rights-of-way on the OCS for activities that "produce or support production, transportation, or transmission of energy from sources other than oil or gas."[18] Thereafter, the DOI delegated this authority to the Minerals Management Service (MMS).[19]

As the new lead permitting authority for Cape Wind, the MMS reviewed the application and determined that it needed to prepare a new Draft EIS.[20] The United States Coast Guard (USCG) also served as a cooperating agency for the EIS due to its interests in maritime navigation and safety.[21] On January 13, 2009, the USCG provided the MMS its final findings concerning potential impacts to marine radar from the proposed wind turbines.[22] The MMS's Final EIS, which the agency released on January 16, 2009, included the USCG's terms and conditions for maritime safety.[23]

Unlike for Cape Wind, which has the potential to be the United States' first offshore wind farm,[24] Congress has not passed legislation providing a clear mandate of authority to any federal agency for permitting wind farms in the Great Lakes. The Energy Policy Act provides the MMS with jurisdiction over only the OCS,[25] defined as "all submerged lands lying seaward" beyond the seaward boundary of ocean-bordering states.[26] However, while most coastal states' boundaries extend three nautical miles from their shores, the offshore boundaries of the Great Lakes states extend until the Canadian border.[27] Since the Great Lakes are not part of the OCS, the MMS does not

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[17] *See* Energy Policy Act of 2005, 42 U.S.C. §§ 15801 et seq. (2006); U.S. DEP'T OF THE INTERIOR, MINERALS MGMT. SERV., *supra* note 13.

[18] 42 U.S.C. § 388(a)(p)(1)(C).

[19] *See* Press Release, Minerals Mgmt. Serv., President Obama, Secretary Salazar Announce Framework for Renewable Energy Development on the U.S. Outer Continental Shelf (Apr. 22, 2009), *available at* http://www.mms.gov/ooc/press/2009/press0422.htm.

[20] *See* U.S. DEP'T OF THE INTERIOR, MINERALS MGMT. SERV., *supra* note 13 ("It was determined that the regulations and requirements under which the Minerals Management Service would authorize the proposed action are substantially different than those under which the U.S. Army Corps of Engineers would have authorized the proposed action, and so it was determined that a new Draft Environmental Impact Statement would need to be prepared.").

[21] *See* Minerals Mgmt. Serv., Cape Wind Energy Project Fact Sheet (Jan. 16, 2009), http://www.mms.gov/ooc/PDFs/CapeWindEISFactSheet.pdf.

[22] U.S. COAST GUARD, ASSESSMENT OF POTENTIAL IMPACTS TO MARINE RADAR AS IT RELATES TO MARINE NAVIGATION SAFETY FROM THE NANTUCKET SOUND WIND FARM AS PROPOSED BY CAPE WIND, LLC (2009), *available at* http://www.mms.gov/offshore/RenewableEnergy/PDFs/USCGRADARfindingsandrecommendationsFINAL.pdf.

[23] *See* Minerals Mgmt. Serv., *supra* note 21; *see also* U.S. DEP'T OF THE INTERIOR, MINERALS MGMT. SERV., *supra* note 13.

[24] *See* Cape Wind, *supra* note 3.

[25] 42 U.S.C. § 388.

[26] 43 U.S.C. § 1331(a) (2006) (citing 43 U.S.C. § 1301 (2006)).

[27] *See id.* § 1312 ("The seaward boundary of each original coastal State is hereby approved

have jurisdiction over permitting any potential wind farms in the Great Lakes, leaving considerable confusion over the permitting authority for these wind farms. Therefore, construction of offshore wind farms in the Great Lakes requires a different analysis from that used for Cape Wind.

II. POSSIBLE SOURCES OF FEDERAL AUTHORITY FOR PERMITTING WIND FARMS IN THE GREAT LAKES

Notwithstanding the lack of a Congressional mandate of permitting authority for offshore wind farms in the Great Lakes, several federal agencies potentially will have a role in permitting these wind farms, including the USACE, USCG, United States Fish and Wildlife Service (FWS), and Federal Aviation Administration (FAA).

A. United States Army Corps of Engineers

The USACE impliedly has jurisdiction as the lead federal agency for permitting offshore wind farms in the Great Lakes. The USACE's mission is to "provide vital public engineering services in peace and war to strengthen our Nation's security, energize the economy, and reduce risks from disasters."[28] The USACE also has authority to protect navigable waters under the Rivers and Harbors Act of 1899 (RHA).[29] The RHA prohibits any obstruction, not authorized by Congress, to the navigable capacity of the waters of the United States[30] and prohibits building structures on United States waters except "on plans recommended by the Chief of Engineers and authorized by the Secretary of the Army."[31] However, the Secretary of the Army delegated authority to the Chief of Engineers to issue or deny a Department of the Army (DA) permit to build a structure on navigable waters.[32] Here, "structure" includes any "permanent mooring structure, power transmission line, permanently moored floating vessel . . . or any other obstacle or obstruction."[33] This broad definition encompasses offshore wind turbines as obstructions on

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and confirmed as a line three geographical miles distant from its coast line or, in the case of the Great Lakes, to the international boundary.").

[28] U.S. Army Corps of Engineers, Mission & Vision, http://www.usace.army.mil/about/Pages/Mission.aspx (last visited Nov. 29, 2009).

[29] *See generally* 33 U.S.C. § 403 (2006).

[30] "Waters of the United States" means "[a]ll waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide." 33 C.F.R. § 328.3(a)(1) (2010). Therefore, since the Great Lakes are waters of the United States, the USACE has jurisdiction over them.

[31] 33 U.S.C. § 403 (2006).

[32] *See* 33 C.F.R § 322.5 (2010).

[33] *Id.* § 322.2(b).

navigable waters.[34] Therefore, if the USACE exercises authority as the lead federal agency for permitting wind farms in the Great Lakes, a developer would need to apply[35] for a DA permit from the Chief of Engineers.

B. United States Coast Guard

The USCG is part of the United States Armed Forces, operating as a service in the Navy under the direction of the Secretary of the Navy during times of war, and during peacetime operations under the auspices of the Department of Homeland Security.[36] The USCG serves to protect the United States' maritime interests, both domestically and internationally.[37]

Construction of offshore wind turbines in the Great Lakes may implicate the USCG's jurisdiction over navigation. The USCG has authority to protect the navigability of United States waters by implementing and enforcing rules for establishing, maintaining, and operating lights and other signals on floating structures in United States waters.[38] Under its United States Aids to Navigation System, the USCG administers systems of visual, audible, and electronic signals that mark certain obstructions in the water in order to aid mariners in navigation.[39] In its Aids to Navigation Manual, the USCG explained

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[34] Support structures for offshore wind turbines vary and include moored floating turbines. *See* DET NORSKE VERITAS, DESIGN OF OFFSHORE WIND TURBINE STRUCTURES 15 (2007), *available at* http://exchange.dnv.com/OGPI/OffshorePubs/Members/os-j101.pdf (listing the support structures for offshore wind turbines, including: moored floating structures, piled structures, gravity-based structures, and skirt and bucket structures). The feasibility study for the proposed Great Lakes Wind Energy Center in Lake Erie posited that a monopile structure would be most suitable for the turbines. *See* Great Lakes Wind Energy Center Final Feasibility Study – Fact Sheet, Technical, Environmental and Economic Key Findings, http://development.cuyahogacounty.us/pdf_development/en-US/FeasibilityFactSheet.pdf (last visited Feb. 28, 2010).

[35] *See* 33 C.F.R. § 325.1(d) (2010) ("The application must include a complete description of the proposed activity including necessary drawings, sketches, or plans sufficient for public notice (detailed engineering plans and specifications are not required); the location, purpose, and need for the proposed activity; scheduling of the activity; the names and addresses of adjoining property owners; the location and dimensions of adjacent structures; and a list of authorizations required by other federal, interstate, state, or local agencies for the work, including all approvals received or denials already made.").

[36] 14 U.S.C. § 3 (2006).

[37] *See* United States Coast Guard, About Us, http://www.uscg.mil/top/about/ (last visited Mar. 1, 2010).

[38] 14 U.S.C. § 85 (2006) ("The Secretary shall prescribe and enforce necessary and reasonable rules and regulations, for the protection of maritime navigation, relative to the establishment, maintenance, and operation of lights and other signals on fixed and floating structures in or over waters subject to the jurisdiction of the United States and in the high seas for structures owned or operated by persons subject to the jurisdiction of the United States.").

[39] 33 C.F.R. § 62.1(c) (2010) ("The Coast Guard maintains systems of marine aids to navigation consisting of visual, audible, and electronic signals which are designed to assist the

that offshore wind turbines should be marked with private aids to navigation, "so as to be conspicuous by day and night, given to prevailing conditions of visibility and vessel traffic."[40]

C. United States Fish and Wildlife Service

The FWS serves to "conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people."[41] The FWS's Project Planning Program is part of the review process for offshore wind turbines under the National Environmental Policy Act (NEPA) either as a cooperating agency or as part of its jurisdiction under various statutes.[42] The Project Planning Program also provides application review and comment for DA permits submitted to the USACE under Section 10 of the RHA.[43] Therefore, if a wind farm developer submits a DA permit to the Chief of Engineers, the FWS may work as a cooperating agency in reviewing the permit. Furthermore, the FWS established the Wind Turbine Siting

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prudent mariner in the process of navigation. The aids to navigation system is not intended to identify every shoal or obstruction to navigation which exists in the navigable waters of the United States, but rather provides for reasonable marking of marine features as resources permit. The primary objective of the aids to navigation system is to mark navigable channels and waterways, obstructions adjacent to these waterways, and obstructions in areas of general navigation which may not be anticipated. Other waters, even if navigable, are generally not marked.").

[40] U.S. DEP'T OF HOMELAND SECURITY, U.S. COAST GUARD, AIDS TO NAVIGATION MANUAL-ADMINISTRATION 4-36 (Mar. 2, 2005), *available at* http://www.uscg.mil/directives/cim/16000-16999/CIM_16500_7A.pdf; *see also* 33 C.F.R. § 66.01-1(a) (2010) ("The Uniform State Waterway Marking System's (USWMS) aids to navigation provisions for marking channels and obstructions (see § 66.10-15 in this part) may be used in those navigable waters of the U.S. that have been designated as state waters for private aids to navigation and in those internal waters that are non-navigable waters of the U.S.").

[41] U.S. Fish and Wildlife Service, National Policy Issuance #99-01, Mission Statement (June 15, 1999), http://www.fws.gov/policy/npi99_01.html.

[42] *See* U.S. Fish & Wildlife Service, The Fish and Wildlife Service and Wind Energy Development, http://www.fws.gov/habitatconservation/wind.html (last visited Nov. 14, 2009) (noting that the FWS may become involved in wind turbine review "because of the Service's responsibilities under the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, the Endangered Species Act, or because of the Agency's special technical expertise."). The Migratory Bird Treaty Act makes it unlawful to kill any migratory bird or eggs of such birds. *See* 16 U.S.C. § 703(a) (2006). The Bald and Golden Eagle Protection Act makes it unlawful to take any bald or golden eagle. *See id.* § 668. "Take" includes wounding and killing these birds. *Id.* § 688(c). The Endangered Species Act provides "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species." *Id.* § 1531(b).

[43] *See* U.S. Fish & Wildlife Service, *supra* note 42.

Working Group to assist wind developers in regards to wildlife considerations and thereby, NEPA review.[44]

The FWS would also become involved in siting wind turbines as part of its responsibility under the Endangered Species Act (ESA). The Great Lakes are home to many species considered endangered or threatened under the ESA.[45] The ESA provides that federal agencies must protect endangered or threatened species from jeopardy[46] and that killing or injuring endangered species is unlawful.[47] The FWS is responsible for enforcing the ESA for both terrestrial and freshwater species,[48] thereby including the Great Lakes under FWS jurisdiction.[49]

Under the ESA, all federal agencies must insure that actions authorized by the agencies are "not likely to jeopardize the continued existence of any endangered species or threatened species."[50] While the ESA does not define "jeopardy," the FWS has broadly defined the term as "engag[ing] in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."[51] In the event that Congress grants permitting authority for offshore wind in the Great Lakes to a federal agency, such as the USACE, the authorizing agency would have the responsibility to insure that the turbines would not jeopardize any endangered or threatened species under the ESA.

In order for the federal agency authorizing the project to determine if a proposed Great Lakes Wind Energy Project will put an endangered species in jeopardy, the agency must perform a two-part test:[52]

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[44] Memorandum from the U.S. Dep't of the Interior, Fish and Wildlife Serv. To Regional Directors, Regions 1-7 on Service Interim Guidance on Avoiding and Minimizing Impacts from Wind Turbines (May 3, 2003), *available at* http://www.fws.gov/habitatconservation/Service%20Interim%20Guidelines.pdf.

[45] *See generally* Dinnell & Russ, *supra* note 11, at 584 (for example, "Lake Erie [alone] is home to various endangered and threatened species, including the Lake Erie water snake, American burying beetle, bald eagle, copperbelly water snake, Indiana bat, lakeside daisy, Scioto madtom, purple cat's paw pearly mussel, running buffalo clover, and the migratory piping plover").

[46] *See* 16 U.S.C. § 1536(a)(2) (2006).

[47] *See id.* § 1538(a)(1)(B); *id.* § 1532(19).

[48] Memorandum from the U.S. Dep't of the Interior, *supra* note 44.

[49] *See* Gregory Nowakowski, *Water Law Symposium: An Introduction*, 53 WAYNE L. REV. 645, 645 (2007) (discussing the Great Lakes as the world's largest concentrated source of freshwater).

[50] 16 U.S.C. § 1536(a)(2).

[51] 50 C.F.R. § 402.02 (2009).

[52] *See* Thomas v. Peterson, 753 F.2d 754, 763 (9th Cir. 1985).

(1) the agency must consult with the FWS to ensure that the proposed construction area contains no endangered species;[53] and
(2) in the event that the area does contain a protected species, then the authorizing agency must compile a biological assessment to determine the impact on the species.[54]

If the assessment reveals that the project is likely to put the species in jeopardy, then the FWS can prevent the project from going forward.[55] The FWS will suggest "reasonable and prudent alternatives" for the project in order to avoid putting the species in jeopardy.[56] However, the Endangered Species Committee may grant an exemption for the specific project.[57]

The ESA also makes it unlawful for any person to "take" an endangered species.[58] "Take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" a species listed under the ESA.[59] Therefore, developers seeking to construct wind turbines in the Great Lakes must consider if the construction might either kill or harm[60] any protected animal.

The example of the Detroit-Windsor Truck Ferry (hereinafter Truck Ferry) and the round pigtoe mollusk illustrates the impact an endangered species can have upon a Great Lakes construction project, even one already under construction. The Truck Ferry transports vehicles across the Detroit River between Windsor, Ontario and Detroit, Michigan.[61] In October 2009, the Truck Fairy underwent an $8.8 million improvement project.[62] However, in November of that year, the project halted after consulting employees found a shell of the endangered round pigtoe mollusk on the site and reported it to the Ministry of Natural Resources and the Department of Fisheries and Oceans.[63]

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[53] 16 U.S.C. § 1536(c)(1) (2006).
[54] *Id.*
[55] *See id.* § 1536(b)(3)(A).
[56] *Id.*
[57] *Id.* § 1536(e)(2).
[58] *Id.* § 1538(a)(1)(B). The "take" provision only applies to endangered species, *id.* § 1538(a)(1), whereas "jeopardy" applies to both threatened and endangered species, *id.* § 1536(a)(2).
[59] 16 U.S.C. § 1532(19) (2006).
[60] The United States Supreme Court upheld a FWS administrative interpretation defining "harm" of a species also to include habitat modification "where it actually kills or injures wildlife by significantly impairing essential behavioral patterns." *See* 50 C.F.R. § 17.3 (2009); Babbitt v. Sweet Home Chapter of Cmtys. for a Great Or., 515 U.S. 687, 708 (1995).
[61] Detroit-Windsor Truck Ferry, Home, http://www.truckferry.com/index.html (last visited Jan. 22, 2009).
[62] Ontario Ministry of Transportation, Backgrounder, Windsor Border Transportation Projects – 2009 Year in Review (Dec. 22, 2009), http://www.mto.gov.on.ca/english/engineering/border/windsor/backgrounder-2009-12-22.shtml.
[63] Dave Battagello, *Shell Discovery Delays Ferry Work: Endangered Species Fears Unfounded*, WINDSOR STAR, Nov. 28, 2009, *available at* http://www.windsorstar.com/

The agencies advised the ferry operator that in the event that experts determined that the construction site was a habitat for the mollusk, construction could be delayed for weeks or months.[64] The agencies stopped construction on the project for nearly two days until experts determined that the shell was decades old and no surviving population of round pigtoe mollusks existed on the Detroit River.[65]

D. Federal Aviation Administration

The FAA serves to provide a safe and efficient aerospace system.[66] A developer planning to construct a building taller than 200 feet must file notice with the FAA.[67] Developers must submit the notice to the FAA at least thirty days before the earlier of either: the date construction will begin or the date the developer files an application for a construction permit.[68] The FAA will use this notice in part to make recommendations regarding whether the building needs marking or lighting.[69] Since offshore wind turbines in the Great Lakes would exceed 200 feet, developers seeking to construct these wind farms would need to file notice with the FAA.[70]

After receiving notice from the developer, the Secretary determines whether the construction of the offshore wind turbines poses a hazard to air navigation.[71] If the Secretary concludes that the turbines could pose a haz-

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entertainment/Shell+discovery+delays+ferry+work/2280044/story.html.

[64] *Id.*

[65] *Id.*

[66] *See* Federal Aviation Administration, Mission, http://www.faa.gov/about/mission/ (last visited Oct. 20, 2009).

[67] *See generally* 49 U.S.C. § 44718 (2006). *See also* 14 C.F.R. § 77.13(a)(1) (2010); FAA Form 7460-1 (2-99), Notice of Proposed Construction or Alteration, http://forms.faa.gov/forms/faa7460-1.pdf (last visited Oct. 20, 2009).

[68] *See* 14 C.F.R. § 77.17(a)(b)(1)(2) (2010).

[69] *See id.* § 77.11(b)(3) (notice provides a basis for "[r]ecommendations for identifying the construction or alteration in accordance with the current Federal Aviation Administration Advisory Circular AC 70/7460-1 entitled 'Obstruction Marking and Lighting,' which is available without charge from the Department of Transportation, Distribution Unit, TAD 484.3, Washington, DC 20590."); *see also* U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., ADVISORY CIRCULAR AC 70/7460-1K, OBSTRUCTION MARKING AND LIGHTING (2007), *available at* http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf (follow "Web Current AC by Date" hyperlink; then follow "AC 70/7460-1K" hyperlink).

[70] *See* Kari Lydersen, *Studies Lift Hopes for Great Lakes Wind Turbine Farms*, WASH. POST, Oct. 7, 2008, at A09 (noting that the wind farm project in Cuyahoga County proposes building 260-foot-tall turbines).

[71] *See* § 44718(b)(1). The FAA will either identify the wind farm as not a hazard to navigation or as "an obstruction unless reduced to a specific height and is presumed to be a hazard to air navigation pending further study." U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., ADVISORY CIRCULAR AC 70/7460-2K, PROPOSED CONSTRUCTION OR ALTERATION OF OBJECTS THAT MAY AFFECT THE NAVIGABLE AIRSPACE 6 (2000), *available at*

ard, the Secretary will conduct an aeronautical study examining the extent of adverse impacts the turbines pose to air navigation.[72] Once the FAA completes the study, the regional office will issue either a "Determination of Hazard to Air Navigation" or "Determination of No Hazard to Air Navigation."[73] If the FAA finds that a proposed Great Lakes Wind Energy Project poses a hazard to navigation, this determination could potentially delay any construction.[74]

E. Summary of Federal Authority

Developers seeking to construct offshore wind farms in the Great Lakes face many potential obstacles before construction may begin. Even considering only federal regulations, the road to construction would be a long journey. A developer would potentially need to: (1) apply for a DA permit from the USACE, which the FWS's Project Planning Program would review and comment on; (2) install navigational aids on the turbines under the authority of the USCG; (3) consider if the construction will kill, injure, or alter the behavioral patterns of protected species under the ESA; and (4) file notice with the FAA and potentially install markings or lighting on the turbines according to the agency's directions.

III. GREAT LAKES STATES' AUTHORITY OVER THEIR COASTLINES

The Great Lakes are both coastal property of eight states and waters of the United States; therefore, the division of authority among the applicable federal and state agencies implicates federalism concerns. Two federal statutes and one common law doctrine address the Great Lakes states' authority over their coastal areas: the Coastal Zone Management Act, the Submerged Lands Act, and the Public Trust Doctrine.

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http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/22990146db0931f186256c2a00721867/$FILE/ac70-7460-2K.pdf.

[72] *See* 49 U.S.C. § 44718(b)(1) (2006) ("[I]f the Secretary decides that constructing or altering a structure may result in an obstruction of the navigable airspace or an interference with air navigation facilities and equipment or the navigable airspace, the Secretary shall conduct an aeronautical study to decide the extent of any adverse impact on the safe and efficient use of the airspace, facilities, or equipment.").

[73] U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., *supra* note 71.

[74] On February 13, 2009, the FAA issued a Notice of Presumed Hazard to Cape Wind Associates, LLC because initial findings "indicate[d] that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities." *See* Federal Aviation Administration, Notice of Presumed Hazard 1 (Feb. 13, 2009), http://www.saveoursound.org/site/DocServer/FAA_Presumed_Hazard.pdf?docID=741.

A. Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) encourages states to participate in managing their coastlines by developing and implementing management programs to utilize the states' coastal resources efficiently and also encourages the cooperation of federal and state agencies in programs relating to the states' coastal zones.[75] Under the CZMA, which the National Oceanic and Atmospheric Administration administers, once a coastal state receives approval for its management program, that state possesses the authority to block construction of a project within its coastal zone that requires federal approval.[76] "Coastal zone" is defined as three miles from a state's coastline;[77] however, in the Great Lakes, the states' coastal zones extend to the international boundary with Canada.[78] Seven of the eight Great Lakes states have approved coastal management programs.[79]

The CZMA also mandates that "each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the *maximum extent practical* with the enforceable policies of approved State management programs."[80] The federal agency must provide a consistency determination to the applicable state agency.[81]

Therefore, under the CZMA, developers receiving a federal permit to build wind farms in the Great Lakes must construct the turbines in a manner consistent with approved state management programs.

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[75] *See* 16 U.S.C. § 1452(2) & (4) (2006). A state coastal management program should include "[a] planning process for energy facilities likely to be located in, or which may significantly affect, the coastal zone, including a process for anticipating the management of the impacts resulting from such facilities." *Id.* § 1455(d)(2)(H).

[76] *See id.* § 1456(c)(3)(A). The two exceptions to the state's power to block permitting are in the event that: (1) the state fails to rule on the project within three months, then approval will be presumed, *id.* § 1456(c)(3)(B)(ii); or (2) the project is required for "national security," *id.* § 1456(c)(3)(B)(iii).

[77] *Id.* § 1453(1), citing 43 U.S.C. § 1301(a)(2) (2006).

[78] *See* 43 U.S.C § 1312 (2006).

[79] *See* NOAA Office of Ocean and Coastal Resource Management, States and Territories Working with NOAA on Ocean and Coastal Management, http://coastalmanagement.noaa.gov/mystate/welcome.html (last visited Aug.19, 2010). Illinois is currently undergoing the application process to gain approval for its coastal management program, with an estimated approval date of 2011. *See* NOAA Office of Ocean and Coastal Resource Management, Ocean and Coastal Management in Illinois, http://coastalmanagement.noaa.gov/mystate/il.html (last visited Aug. 19, 2010).

[80] 16 U.S.C. § 1456(c)(1)(A) (emphasis added).

[81] *Id.* § 1456(c)(1)(C). After receipt of the consistency determination, the state then informs the federal agency of either its concurrence or objection. *See* 15 C.F.R. § 930.41 (2010).

B. Submerged Lands Act

Under the Submerged Lands Act (SLA), the Great Lakes states possess authority to "manage, administer, lease, develop, and use" the submerged lands that extend from their coastlines to the boundary with Canada.[82] Potential offshore wind farm projects in the Great Lakes propose laying transmission cables for the wind turbines below the Great Lakes floor; therefore, developers would lay the cables on the lands beneath navigable waters.[83]

C. Public Trust Doctrine

The Public Trust Doctrine provides that "certain public resources, navigable waters and submerged lands are of such importance to the general public that they are incapable of purely private ownership or control."[84] In *Illinois Central Railroad Co. v. Illinois*, the United States Supreme Court extended the public trust doctrine to cover the Great Lakes.[85] The Court determined title of the lands on Chicago's lakefront upon which the Illinois Central Railroad Company had tracks, depots, and piers.[86] The Illinois Central Railroad Company also claimed title to submerged lands within the city limits.[87] The Court held that:

> [S]uch property is held by the State, by virtue of its sovereignty, in trust for the public. The ownership of the navigable waters of the harbor and of the lands under them is a subject of public concern to the whole people of the State. The trust with which they are held, therefore, is governmental and cannot be alienated, except in those instances mentioned of parcels used in the improvement of the interest thus held, or when parcels can be disposed of without detriment to the public interest in the lands and waters remaining.[88]

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[82] *See* 43 U.S.C. § 1311(a) (2006); *see also id.* § 1312.

[83] *See* Lydersen, *supra* note 70.

[84] Chris A. Shafer, *Emerging Legal Issues in the Great Lakes Such as the Public Trust Doctrine, Subterranean Rights and Municipal Regulatory Arrangements*, 34 CAN.-U.S. L.J. 303, 304-05 (2010).

[85] *See* 146 U.S. 387, 437 (1892) ("We hold, therefore, that the same doctrine as to the dominion and sovereignty over and ownership of lands under the navigable waters of the Great Lakes applies, which obtains at the common law as to the dominion and sovereignty over and ownership of lands under tide waters on the borders of the sea, and that the lands are held by the same right in the one case as in the other, and subject to the same trusts and limitations.").

[86] *See id.* at 433.

[87] *See id.*

[88] *Id.* at 456.

The Public Trust Doctrine has recently been utilized to protect the rights of the public in the Great Lakes Region. In 2005, in *Glass v. Goeckel*, the Michigan Supreme Court held that the Public Trust Doctrine preserves the right of the public to walk along the shore of Lake Huron below the ordinary high water mark.[89] The defendant property owners argued that the plaintiff could not walk along their lakefront property without their permission.[90] The court determined that while the state had the authority to convey lakefront property to the defendants, this private title was subject to the public trust.[91]

IV. THE GOVERANCE STRUCTURE OF THE GREAT LAKES

The Great Lakes present a unique environment for permitting wind farms because beyond individual state and federal interests, the Great Lakes have their own particular governance structure and stakeholders with interests in the area.

A. The Great Lakes Basin Compact

The Great Lakes states began negotiating to create an interstate compact in the 1940s,[92] which led to the creation of the Great Lakes Basin Compact (GLBC) in 1955 through the legislative action of five of its eight member states.[93] Beginning in 1956, Congress considered many bills and finally granted its consent to the GLBC in 1968.[94] The GLBC is binding upon its member states of Illinois, Indiana, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin, as well as its associate members, Ontario and Quebec.[95] The purpose of the GLBC includes "[t]o promote the orderly, integrated, and

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[89] 703 N.W.2d 58, 674-75 (Mich. 2005).

[90] *Id.* at 676.

[91] *Id.* at 679; *see also id.* at 681 ("Public rights in certain types of access to the waters and lands beneath them remain under the protection of the state. Under the public trust doctrine, the sovereign never had the power to eliminate those rights, so any subsequent conveyances of littoral property remain subject to those public rights.").

[92] *See* Joseph W. Dellapenna, *Interstate Struggles over Rivers: The Southeastern States and the Struggle over the 'Hooch'*, 12 N.Y.U. ENVTL. L. J. 828, 852 (2005).

[93] The Great Lakes Basin Compact, http://www.glc.org/about/glbc.html (last visited Oct. 28, 2009) ("The Commission was officially organized and established December 12, 1955 subsequent to ratification of the compact by five states (Illinois, Indiana, Michigan, Minnesota and Wisconsin).").

[94] *See* Great Lakes Basin Compact of 1968, Pub. L. No. 90-419, 82 Stat. 414 (1968); The Great Lakes Basin Compact, *supra* note 93.

[95] *See* The Great Lakes Commission, About the Great Lakes Commission, http://www.glc.org/about (last visited Oct. 28, 2009).

comprehensive development, use, and conservation of the water resources of the Great Lakes Basin."[96]

The GLBC also established the Great Lakes Commission (GLC), a body comprised of three to five commissioners from each party state.[97] The GLC cooperates with the governments of the United States, Canada, and party states, as well as any other interested parties; it also collects data and makes recommendations regarding the use of water resources in the Great Lakes Basin.[98] Furthermore, the GLC has power to "consider the need for and desirability of public works and improvements relating to the water resources in the Basin or any portion thereof."[99] Therefore, the GLC has authority to make non-binding recommendations on the need for offshore wind turbines as improvements to the Great Lakes, and, under the GLBC, the party states agree to consider the Commission's recommendations.[100]

The GLC staffs the Great Lakes Wind Collaborative (GLWC), a coalition that serves in an advisory capacity to "build consensus on identifying and addressing issues affecting the planning, development, and operation of wind power facilities in the Great Lakes Region."[101] Multiple actors comprise the GLWC's Advisory Committee, including representatives from federal agencies, such as the USACE; state agencies; municipal interest groups; and representatives from groups such as trade associations, environmental organizations, and the wind industry.[102]

The GLWC recently created a document proposing siting principles and guidelines for wind farms in the Great Lakes.[103] In that document, the GLWC made the following recommendations: (1) developers should consult

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[96] *See* Great Lakes Basin Compact art. I § 1.

[97] *Id.* art. IV.

[98] *Id.* art. VI. § 12 (the GLC has the power to "[c]ooperate with the governments of the United States and of Canada, the party states and any public or private agencies or bodies having interests in or jurisdiction sufficient to affect the Basin or any portion thereof."); *id.* art. VI. § 1 (the GLC has the power to "[c]ollect, correlate, interpret, and report on data relating to the water resources and the use thereof in the Basin or any portion thereof."); *id.* art. VI. § 2 (the GLC has the power to "[r]ecommend methods for the orderly, efficient, and balanced development, use and conservation of the water resources of the Basin or any portion thereof to the party state and to any other governments or agencies having interests in or jurisdiction over the Basin or any portion thereof.").

[99] *Id.* art. VI. § 3.

[100] *Id.* art. VII § 9; *id.* art. VI. § 14 ("[N]o action of the Commission shall have the force of law in, or be binding upon, any party state.").

[101] Great Lakes Wind Collaborative, Great Lakes Wind Collaborative Charter, http://www.glc.org/energy/wind/pdf/GLWC-CharterFINAL3-20-08.pdf (Oct. 30, 2009).

[102] *See id.*

[103] *See generally* GREAT LAKES WIND COLLABORATIVE, OFFSHORE SITING PRINCIPLES AND GUIDELINES FOR WIND DEVELOPMENT ON THE GREAT LAKES (Oct. 2009), *available at* http://www.glc.org/energy/wind/pdf/Offshore-Siting-Principles-and-Guidelines-for-Wind-Development-on-the-Great-Lakes_FINAL.pdf.

with the appropriate state and federal regulatory agencies early on in the planning process; (2) these state and federal agencies should work with developers to identify any appropriate organizations to involve in the siting process;[104] and (3) the federal agencies should consult with all government agencies that will be involved or substantially affected by the offshore wind turbines to ensure that the agencies properly address all issues.[105] The GLWC also identified a list of environmental concerns that may impact the siting of offshore farms, including the effect turbines may have on fishery resources and habitat, lake floor and lake shore habitats, and avian and bat populations. Furthermore, it recognized that wind turbines may create safety concerns for air and nautical traffic, impact the general acoustic environment, and alter scenic, historic, and cultural resources.[106]

B. The Great Lakes-St. Lawrence River Basin Water Resources Compact

In October 2008, President George Bush signed into law the Great Lakes-St. Lawrence River Basin Water Resources Compact (hereinafter Great Lakes Compact).[107] The states of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin each passed the Great Lakes Compact in their respective legislatures, and Quebec and Ontario agreed to follow the compact in good faith.[108] While the Great Lakes Compact serves mainly to prevent fresh water diversion from the Great Lakes,[109] the compact also concerns maintaining the water quality of the Great Lakes.[110] The finding that the Great Lakes have the potential to serve multiple purposes, including "energy development and production" also informs the purpose of the Great Lakes Compact.[111] Furthermore, the Great Lakes Compact encourages "retaining State management authority over Water management decisions within the Basin."[112]

The Great Lakes Compact created the Great Lakes-St. Lawrence River Basin Water Resources Council (hereinafter Great Lakes Council) to manage

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[104] *Id.* at 5.
[105] *Id.*
[106] *See id.* at 6-11.
[107] *See* Great Lakes – St. Lawrence River Basin Water Resources Compact of 2008, Pub. L. No. 110-342, 122 Stat. 3739 (2008).
[108] *See* Great Lakes – St. Lawrence River Water Resources Regional Body, http://www.glslregionalbody.org/ (last visited Oct. 30, 2009).
[109] *See* Noah D. Hall, *Protecting Freshwater Resources in the Era of Global Water Markets: Lessons Learned from Bottled Water*, 13 U. DENV. WATER L. REV. 1, 37 (2009).
[110] *See* Great Lakes – St. Lawrence River Basin Water Resources Compact, *supra* note 107, § 4.2(1).
[111] *Id.* § 1.3(1)(c).
[112] *Id.* § 1.3(2)(d).

implementation of the compact.[113] The Great Lakes Compact provides that members of the Great Lakes Council shall not allow any actions within the Great Lakes basin that would violate the provisions of the compact without the council's approval.[114] Therefore, under the Great Lakes Compact, the compact will bind the member states in any actions that may affect the water quality of the Great Lakes or the surrounding Basin.

V. OHIO'S INTERESTS IN WIND ENERGY AND REGULATORY STRUCTURE FOR SITING OFFSHORE WIND FARMS

While many states and municipalities are conducting feasibility studies of wind farms in the Great Lakes,[115] experts predict that the first offshore wind turbines in the Great Lakes will be in Lake Erie offshore of Cleveland.[116] In 2008, the Cuyahoga County Board of County Commissioners, along with JW Great Lakes Wind, LLC began a feasibility study on wind turbines in Lake Erie.[117] This study examines the feasibility of a proposed Great Lakes Wind Energy Center, which would include a research center and offshore turbines generating between five and twenty megawatts of electricity.[118] On May 1, 2009, the Cuyahoga County Board of County Commissioners released the final feasibility study.[119] The study found that the Great Lakes Wind Energy

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[113] *Id.* § 2.1.

[114] *Id.* § 4.3.

[115] *See, e.g.*, Lydersen, *supra* note 70 (Michigan study); Press Release, Bill Mason, Cuyahoga County Prosecutor, The Great Lakes Energy Development Task Force Releases Final Feasibility Study on Offshore Wind Pilot Project (May 1, 2009), *available at* http://development.cuyahogacounty.us/pdf_development/en-US/FeasibilityPressRelease.pdf (Cuyahoga county study for Lake Erie); Press Release, Pub. Serv. Comm'n of Wis., PSC Issues Final Report on Great Lakes Wind Energy Study (Jan. 15, 2009), *available at* http://psc.wi.gov/pdffiles%5CNews%20Releases%5C2009%5C01%20January%5Cwowfinalreportrelease.pdf (Public Service Commission of Wisconsin study for Lake Michigan); Lea Radick, *N.Y. Utility Explores Wind Energy in Great Lakes*, E&E NEWS, Feb. 4, 2009, http://www.eenews.net/public/climatewire/print/2009/04/24/4 (New York Power Authority study for Lake Erie and Lake Ontario).

[116] *See* Thomas Content, *Wind Turbines Could Be on Great Lakes in 3 Years*, MILWAUKEE-WIS. J. SENTINEL, June 10, 2009, http://www.jsonline.com/business/47729622.html ("The first wind turbine development on the Great Lakes could be built within three years or so, experts on offshore wind power said during a conference Wednesday in Milwaukee.").

[117] *See* Cuyahoga County Commissioners Department of Development, Great Lakes Wind Energy Center Feasibility Study, http://development.cuyahogacounty.us/en-US/Wind-Turbine-Feasibility-Study.aspx (last visited Nov. 25, 2009).

[118] *Id.*

[119] *See* Press Release, Bill Mason, *supra* note 115; *see also* BARBI DRIEDGER-MARSCHALL ET AL., GREAT LAKES WIND ENERGY CENTER FEASIBILITY STUDY: FINAL FEASIBILITY REPORT (2009), http://development.cuyahogacounty.us/pdf_development/en-US/GLWECFeasibilityRpt.pdf.

Center is "feasible, pending approval by regulatory agencies and solutions to make the project more economically viable."[120]

Additionally, the prospect of constructing offshore wind turbines is pertinent to Ohio because the state is one of thirty-three states and the District of Columbia that have enacted Renewable Portfolio Standards.[121] The purpose of a Renewable Portfolio Standard is to increase a state's renewable energy generation by creating market demand for the energy through a legislative mandate that the state generate a certain percentage of its electricity from renewable sources by a specific date.[122] Ohio's Alternative Energy Portfolio Standard provides that by 2025, 25% of electricity sold in Ohio must come from alternative energy resources,[123] with at least half, 12.5%, coming from renewable resources.[124] A "renewable energy resource" includes wind energy.[125] Thus, constructing wind turbines in Lake Erie could help Ohio meet its renewable energy goals by 2025.

The state of Ohio has its own siting and environmental review procedures for wind farms, which are also applicable to offshore turbines. The Ohio Power Siting Board (OPSB) and the Ohio Department of Natural Resources (ODNR) perform siting and environmental review for wind turbines in Ohio.

A. The Ohio Power Siting Board

The OPSB reviews plans for new energy facilities in Ohio, including renewable energy sources.[126] The OPSB has jurisdiction over siting economically significant wind farms, which are "wind turbines and associated facilities with a single interconnection to the electrical grid and designed for, or capable of, operation at an aggregate capacity of five or more megawatts but less than fifty megawatts."[127] A developer may not construct an economically significant wind farm in Ohio without first obtaining a certificate from the

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120 *See* DRIEDGER-MARSCHALL ET AL., *supra* note 119, at 1-5.

121 *See* U.S. Environmental Protection Agency, Renewable Portfolio Standards Fact Sheet, http://www.epa.gov/chp/state-policy/renewable_fs.html (last visited Nov. 25, 2009) (explaining that five of the thirty-three states, North Dakota, South Dakota, Utah, Virginia, and Vermont, have Renewable Portfolio Standards goals, not mandatory requirements).

122 *See id.*

123 *See* S.B. 221, 127th Gen. Assem., § 4928.64(B) (Ohio 2008).

124 *Id.* § 4928.64(B)(2).

125 *Id.* § 4928.01(A)(35).

126 *See* Ohio.gov, Power Siting Board, http://www.opsb.ohio.gov/ (last visited Nov. 25, 2009); *see also* GREAT LAKES WIND COLLABORATIVE, GREAT LAKES COMM'N, STATE AND PROVINCIAL LAND-BASED WIND FARM SITING POLICY IN THE GREAT LAKES REGION: SUMMARY AND ANALYSIS 9 (2010), *available at* http://www.glc.org/energy/wind/pdf/GLWC-LandBasedSiting-Jan2010.pdf.

127 OHIO REV. CODE ANN. §§ 4906.13(A) & 4906.20(A) (Supp. 2010).

OPSB, which provides regulations for construction, operation, and maintenance of the turbines.[128]

On October 28, 2008, the OPSB adopted rules for certification of economically significant wind farms in Ohio.[129] Under these rules, a developer must apply for a certificate of environmental compatibility and public need;[130] the application must include a detailed description of the proposed wind farm and detailed project schedule.[131] The application must also include an evaluation of environmental effects and health and safety concerns, such as noise level, ice throw, blade shear, and shadow flicker.[132]

Public agencies and political subdivisions in Ohio have no jurisdiction over economically significant wind farms;[133] however, these authorities have jurisdiction over siting and regulation of "small wind farms," which generate less than five megawatts of electricity.[134]

B. The Ohio Department of Natural Resources

For environmental review, the ODNR established a Terrestrial Wind Energy Voluntary Cooperation Agreement on March 14, 2008.[135] The agree-

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[128] *See id.* § 4906.20(A).

[129] *See* News Release, Ohio Power Siting Board, OPSB Adopts Rules for Siting Wind Farms (Oct. 28, 2008), *available at* http://www.opsb.ohio.gov/OPSB/mediaroom/mediarelease.cfm?id=4294.

[130] *See id.*

[131] *See* OHIO ADMIN. CODE § 4906-17-03 (2004) (instructing applicants to include, among other criteria: type and number of turbines; estimated net demonstrated capability; annual capacity factor; off-shore boundaries; size of project area; the footprint, height, and blade length of the turbine; and any new transmission lines).

[132] *See id.* § 4906-17-07; *id.* § 4906-17-08.

[133] OHIO REV. CODE ANN. § 4906.13(B) (Supp. 2010) ("No public agency or political subdivision of this state may require any approval, consent, permit, certificate, or other condition for the construction or initial operation of a major utility facility or economically significant wind farm authorized by a certificate issued pursuant to Chapter 4906 of the Revised Code.").

[134] *Id.* § 519.213(A) ("'[S]mall wind farm' means wind turbines and associated facilities with a single interconnection to the electrical grid and designed for, or capable of, operation at an aggregate capacity of less than five megawatts."); *id.* § 519.213(B) (explaining that for both publically and privately owned small wind farms, a board of township trustees or board of zoning appeals has authority over location, erection, construction, reconstruction, change, alteration, maintenance, removal, use, or enlargement); *id.* § 713.081(B) ("[Conferring] power on the legislative authority of a municipal corporation with respect to the location, erection, construction, reconstruction, change, alteration, maintenance, removal, use, or enlargement of any small wind farm as a public utility, whether publicly or privately owned, or the use of land for that purpose."); *id.* § 303.213(B) ("[Conferring] power on a board of county commissioners or board of zoning appeals to adopt zoning regulations governing the location, erection, construction, reconstruction, change, alteration, maintenance, removal, use, or enlargement of any small wind farm, whether publicly or privately owned, or the use of land for that purpose.").

[135] *See* Ohio Dep't of Natural Res., Ohio Department of Natural Resources Terrestrial Wind

ment's purpose is for the ODNR to coordinate with wind energy developers so that they construct wind farms in a way that minimizes adverse impacts to the environment and wildlife.[136] While this agreement is voluntary, developers who decide to coordinate would notify the ODNR of plans to develop a wind farm of or above ten megawatts, or five turbines.[137] The ODNR would then review the site to provide information on environmental issues and determine whether the building site requires monitoring for bird and bat mortality.[138] The ODNR would also issue a scientific collectors permit to the developer.[139]

The ODNR Office of Coastal Management has also created a Wind Turbine Placement Favorability Analysis Map, which maps out the most favorable places to build turbines in Lake Erie, accounting for navigability, distance from shore, proximity to fisheries, and environmental concerns.[140]

VI. ANALYSIS OF POTENTIAL SOLUTIONS AND PROPOSAL OF A COORDINATED REGIONAL APPROACH FOR PERMITTING WIND TURBINES IN THE GREAT LAKES

A. Problems in a Federal Solution

Offshore wind farm development is moving closer to realization in Lake Erie; however, in the absence of a Congressional mandate of permitting authority, stakeholders will require a regulatory structure to guide the permitting of offshore turbines. At first glance, the immediate solution is to follow the regulatory process used on the OCS to permit Cape Wind and delegate the main permitting authority to a single federal agency, namely the USACE. However, a grant of permitting authority to one federal agency would be inappropriate because of the unique nature of the Great Lakes states' authority over their coastal areas and the concerns of Great Lakes stakeholders.

Energy Voluntary Cooperative Agreement (Mar. 14, 2008), *available at* http://www.ohiodnr.com/LinkClick.aspx?fileticket=GsssB%2BJeczA%3D&tabid=21467.

[136] *See id.*

[137] *See id.*

[138] *See id.*

[139] *See id.* ("ODNR agrees to issue a scientific collectors permit in accord with Ohio Revised Code §1533.08 (and further defined under Ohio Administrative Code Section 1501:31-25-01 and 02), defining the terms and conditions for use throughout the project area by the Cooperator's designated biologist(s) for all bats, birds, and state-listed threatened or endangered species which are collected while conducting the ODNR's approved monitoring plan and mortality protocol.").

[140] *See* Ohio Department of Natural Resources, Office of Coastal Management, Wind Turbine Placement Favorability Analysis, http://www.ohiodnr.com/LinkClick.aspx?fileticket=4964Td0KAQQ%3d&tabid=21234 (last visited Nov. 25, 2009).

Notwithstanding Congress' grant of jurisdiction to the MMS as the lead permitting authority on the OCS,[141] the jurisdictional differences alone between the Great Lakes and the states on the OCS under the SLA[142] suggest that a solution appropriate for the OCS may not be the appropriate solution for the Great Lakes.

The example of ballast water and invasive species in the Great Lakes demonstrates why a federal solution does not adequately address Great Lakes interests, and thus is not the appropriate solution for permitting offshore wind farms in the Lakes.

Since the 1800s, more than 180 invasive species[143] have entered the Great Lakes ecosystem.[144] These invasive, or non-native, species have caused a variety of problems, such as degradation to the coastal environment, interruption of the food chain, and disruption to power plants and water supplies.[145] Thirty percent of the invasive species in the Great Lakes have come from ballast water, defined as water that is "taken onto or discharged from a ship as it loads or unloads its cargo, to accommodate changes in its weight."[146]

The USCG is the lead federal agency for regulating ballast water under the National Invasive Species Act of 1996 (NISA) and the Non-Indigenous Aquatic Nuisance Prevention and Control Act of 1990.[147] NISA directed the USCG to establish voluntary guidelines to manage the ballast water problem,[148] and mandatory guidelines if the voluntary guidelines were inadequate.[149] The USCG established a nationwide voluntary program in 1988, but later established mandatory guidelines.[150] The mandatory guidelines

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[141] *See* 42 U.S.C. §§ 15801 et seq.

[142] *See* 43 U.S.C. § 1331(a) (2006) (citing 43 U.S.C. § 1301 (2006)); *id.* § 1312 (2006).

[143] Press Release, Great Lakes Comm'n, Congress Urged to Make Ballast Water Rules #1 Great Lakes Priority (May 15, 2007), *available at* http://www.glc.org/announce/07/05ballast.html.

[144] *See* U.S. Environmental Protection Agency, Invasive Species-Great Lakes, http://www.epa.gov/glnpo/invasive/ (last visited Nov. 27, 2009).

[145] *See id.*

[146] *Id.*

[147] *See* Aquatic Nuisance Prevention and Control Act, 16 U.S.C. §§ 4701 et seq. (2006); *see also* Daniel A. Applegate, Note, *The New Cold War: The Battle to Prevent Eurasian Invaders from Destroying the Great Lakes*, 57 CASE W. RES. L. REV. 391, 395 (2007). In 2008, the Environmental Protection Agency issued a national general permit to regulate ballast water under the Clean Water Act in response to a Ninth Circuit holding; however, the Environmental Protection Agency's efforts are "essentially a codification of existing Coast Guard regulations." *See* Suzanne Bostrom, *Halting the Hitchhikers: Challenges and Opportunities for Controlling Ballast Water Discharges and Aquatic Invasive Species*, 39 ENVTL. L. 867, 899 (2009).

[148] 16 U.S.C. § 4711(a)(1).

[149] *Id.* § 4711(f)(1)(2).

[150] *See* U.S. Coast Guard, Ballast Water Management, http://www.uscg.mil/hq/cg5/cg522/cg5224/bwm.asp (last visited Nov. 28, 2009).

require that ships entering the St. Lawrence Seaway from international waters[151] must use one of the following ballast water management methods: (1) exchange their ballast water; (2) retain their ballast water aboard the ship; or (3) use an alternative method approved by the USCG.[152]

Despite the USCG's ballast water management guidelines, invasive species remain a problem in the Great Lakes.[153] While the USCG requires ships to exchange or retain their ballast water in most situations, a loophole exists because the majority of ships entering the St. Lawrence Seaway are fully loaded with cargo and declare that they have no ballast water;[154] however, these ships still have residual water and sediment in their tanks, which allows invasive species to survive and subsequently discharge into the Lakes.[155]

Experts believe that the USCG's methods are inadequate for protecting the Great Lakes against invasive species.[156] In response to concerns about the effectiveness of the regulations, the USCG published proposed stricter standards for ballast water treatment on August 28, 2009.[157] Notwithstanding this move towards stricter standards, Great Lakes stakeholders still have concerns about whether these standards are technologically possible and whether the proposed implementation is too slow.[158]

The inadequate federal standards have led some Great Lakes states to develop their own ballast water management standards, adding to the confusion

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[151] 33 C.F.R. 151.1502 (2010).

[152] *Id.* § 151.1510(a)(1)(2)(3).

[153] *See* CLAUDIA COPELAND, CONG. RESEARCH SERV., RL34640, REGULATING BALLAST WATER DISCHARGES: CURRENT LEGISLATIVE ISSUES CRS-1 (2008) ("However, ballast water exchange is believed to be only partially effective and is often not carried out due to safety considerations. The current federal program has been criticized as inadequate, including criticism of the Coast Guard for delays in implementing necessary rules.").

[154] *See* Applegate, *supra* note 147, at 396.

[155] *See id.* ("When these ships unload their cargo and load new cargo, they pump water in and out of the tanks, allowing the sediment in the ballast tanks to mix with the new ballast water. Subsequent discharges release non-native organisms into the water.").

[156] *Id.* at 398 ("Experts agree that the current method of ballast water exchange is insufficient and that treating the tanks is the most effective way to kill organisms."); *see also* COPELAND, *supra* note 153.

[157] *See* Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters, 74 Fed. Reg. 44632 (proposed Aug. 28, 2009) (to be codified at 33 C.F.R. pt. 151 & 46 C.F.R. pt. 162); *see also* Kari Lydersen, *Rules Offered on Ships' Ballast Water; Coast Guard Aims to Halt Spread of Invasive Aquatic Species*, WASH. POST, Aug. 30, 2009, at A04 ("The proposed Coast Guard regulations, open for a 90-day public comment period, would mimic the International Maritime Organization's standards for an initial phase and then become essentially 1,000 times stricter for a second phase, as measured in numbers of live organisms per cubic meter of ballast water.").

[158] *See* Lydersen, *supra* note 157 (discussing environmental groups' disappointment in the USCG's timetable, which would require ships to meet Phase 1 standards between 2014 and 2016, but might not require ships to meet Phase 2 standards for another five years).

over the regulation of ballast water.[159] Michigan, Minnesota, and New York have enacted state permit requirements or regulations for ballast water, and Wisconsin has a draft permit, which will take effect on February 1, 2010.[160] After the states began enacting their own ballast water standards, both environmental groups and the shipping industry brought lawsuits to challenge the state requirements, which the groups respectively considered too weak or too stringent.[161]

In 2001, the GLC's Great Lakes Panel on Aquatic Nuisance Species released a policy statement on ballast water management.[162] The Great Lakes Panel urged a coordinated regional approach to address the ballast water issue, emphasizing that "regional initiatives that harmonize federal, state and provincial approaches hold potential to be more effective and efficient than efforts made by individual jurisdictions."[163] The Panel also recommended that Great Lakes states take an active role in the development of guidelines in cooperation with regional, federal, and binational entities.[164]

B. Problems in a "Patchwork" Solution among the States

While the Great Lakes states have jurisdictional authority over their coasts, a regulatory solution at the other extreme, delegating all authority to the states, is also inappropriate. An analysis of the statutes governing the states' authority over their coasts reveals that Congress intended for the fed-

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[159] *See* D'Arcy Egan, *Sen. Voinovich Waging Battle for Lake Erie's Health, Stability*, PLAIN DEALER (Cleveland), July 18, 2009, at D2; *see also* Michigan DNRE, Ballast Water Permits Now Available-Program Will Help Fight Invasive Species (Oct. 19, 2006), http://www.michigan.gov/deq/0,1607,7-135--154144--,00.html (noting that "without action at the federal level" the Great Lakes states must collaborate to protect the Great Lakes against invasive species).

[160] *See* 2005 Mich. Pub. Acts 33 (requiring all oceangoing vessels to obtain a permit from the Department of Environmental Quality in order to engage in port operations in Michigan); Letter from William R. Adriance, Chief Permit Adm'r, N. Y. State Dep't of Envtl. Conservation, to Barbara Finazzo, Dir., Div. of Envtl. Planning and Prot., U.S. Envtl. Prot. Agency (Dec. 17, 2008), *available at* http://www.epa.gov/npdes/pubs/401_newyork.pdf; Minnesota Pollution Control Agency, State Disposal System (SDS) Permit MNG300000, Ballast Water Discharge General Permit (Sept. 24, 2008), http://www.pca.state.mn.us/publications/ballast-finalpermit-092408.pdf (ballast water discharge general permit covering oceangoing and Great Lakes vessels); Wisconsin Department of Natural Resources, Ballast Water Discharge General Permit, http://dnr.wi.gov/news/mediakits/mk_ballast.asp (last visited Jan. 25, 2009).

[161] *See* Press Release, Natural Res. Def. Council, NY Ballast Water Decision: Good for the Great Lakes (June 1, 2009), *available at* http://www.nrdc.org/media/2009/090601.asp.

[162] *See* GREAT LAKES PANEL ON AQUATIC NUISANCE SPECIES, POLICY STATEMENT ON BALLAST WATER MANAGEMENT (2001), *available at* http://www.glc.org/ans/pdf/ballastpolicy statement.pdf.

[163] *See id.* at 4.

[164] *See id.*

eral and state governments to share the decision-making power over the Great Lakes states' coastlines. For example, while the CZMA grants Great Lakes states authority over their coastal zones, this authority is not absolute. In fact, the CZMA mandates that federal action affecting coastal property of the states be consistent with state management plans "to the maximum extent practical."[165] Furthermore, the CZMA's congressional findings set forth the policy of "encourag[ing] the participation and cooperation of the public, state and local governments . . . as well as of the Federal agencies having programs affecting the coastal zone, in carrying out the purposes of [the CZMA]."[166] The CZMA also declares that state management programs should provide for "continued consultation and coordination with, and the giving of adequate consideration to the views of, affected Federal agencies."[167] These provisions demonstrate that Congress did not intend for the states to have complete control over their coastal zones, but rather to collaborate with federal authority.

While each Great Lakes state has individual interests, practical problems also exist in a purely state-by-state or "patchwork" approach to regulation. In the ballast water problem, when states began enacting their own ballast water standards, commentators suggested that individual state regulation could be problematic and confusing for ships traveling through multiple jurisdictions.[168] With offshore wind farms, state-by-state regulation could also be problematic. In the event that authority is delegated to the states to each develop their own regulatory structure, problems could arise because of the overlapping jurisdictions with more than one state bordering a lake. If a developer constructs a wind farm crossing two states' jurisdictional boundaries, the issue would then arise over which state's permitting laws would control or whether the developer would have to apply for two sets of permits from the states.

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165 *See* 16 U.S.C. § 1456(c)(1)(A) (2006).

166 *Id.* § 1452(4).

167 *Id.* § 1452(2)(H).

168 *See* Dan Egan, *Patchwork ballast rules emerging to battle invaders*, MILWAUKEE J. SENTINEL, Mar. 1, 2009, at A01; *see also* David Harrison, *Threat from Asian Carp Bears Down on the Great Lakes; Federal Action Sought Against Fish and Other Non-Native Species*, WASH. POST, Aug. 15, 2010, at A03 (explaining that individual state ballast water regulations encourage shippers to find the state with the least stringent requirements, thereby endangering the other states); Kari Lydersen, *Major Shipping Route Fosters a Plague of Sea Life*, WASH. POST, Aug. 31, 2009, at A10 ("Steve Fisher, executive director of the American Great Lakes Ports Association, called different regulations in each state a 'nightmare scenario.'").

C. Recommendation for a Harmonized Regional Approach

An analysis of the statutes governing the relationship between the Great Lakes states and the federal government reveals that Congress intended for the states to exercise more authority over their coastlines than other ocean-bordering states.[169] For instance, the Great Lakes states have all of the following: (1) jurisdiction over the lands under navigable waters where transmission cables would be laid for offshore wind turbines,[170] (2) congressional encouragement under the CZMA to maintain their coastal areas[171] and cooperate with federal and local entities,[172] and (3) potential authority to block construction of a project requiring federal approval.[173] Consequently, an appropriate solution to the regulatory problem would be to harmonize state and federal power.

The Great Lakes' unique governance structure strengthens the conclusion that federalizing the permitting authority will not adequately address the many interests in the Great Lakes region. While compacts such as the GLBC do not provide direct authority over permitting offshore wind farms, the states have agreed to consider the recommendations of these stakeholders; in addition, the compacts concern a variety of issues that could inform construction of wind turbines in the Great Lakes.[174] A solution that harmonizes state, federal, and local authority would provide Great Lakes stakeholders greater input over permitting and siting decisions.

In 2004, a presidential Executive Order established the Great Lakes Regional Collaboration (GLRC), a partnership of federal, state, and local governments, as well as other interested stakeholders, to develop a strategy to restore the environmental health and economic benefits of the Great Lakes.[175] In December 2005, the GLRC released the Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes (hereinafter Collabora-

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[169] Unlike states on the OCS, which have jurisdiction extending three nautical miles from their shores, Great Lakes states' jurisdiction extends to the boundary with Canada. *See* 43 U.S.C. § 1312 (2006) ("The seaward boundary of each original coastal State is hereby approved and confirmed as a line three geographical miles distant from its coast line or, in the case of the Great Lakes, to the international boundary.").

[170] *See id.*

[171] *See* 16 U.S.C. § 1452(2) (2006).

[172] *Id.* § 1452(4).

[173] *See id.* § 1456(c)(3).

[174] *See* Great Lakes Basin Compact of 1968, Pub. L. No. 90-419, art. VII § 9, 82 Stat. 414, 418 (1968); *id.* art. VI. § 14.

[175] *See* Exec. Order No. 13,340, 69 Fed. Reg. 29,043 (May 18, 2004); *see also* Great Lakes Commission, Legislative Priority Fact Sheet: Investing in Great Lakes Restoration and Economic Revitalization (Feb. 2009), http://www.glc.org/restore/pdf/2009/GLRC-priority%20fact%20sheet-FINAL.pdf.

tion Strategy), a blueprint for restoring the Great Lakes ecosystem.[176] In order to address issues facing the Great Lakes, such as aquatic invasive species, toxic pollutants, and sustainable development, the GLRC recommended a coordinated regional approach.[177] Although the Collaboration Strategy does not specifically address the regulatory issue of offshore wind farms, this regional approach presents a potential model for offshore wind regulation in the Great Lakes.

The Collaboration Strategy sets forth the first step in restoring the Great Lakes as coordinating the approximately 140 federal, state, municipal, and tribal programs, as well as non-governmental actors with interests in the Great Lakes.[178] The Collaboration Strategy also recognizes that:

> [N]o one Collaboration partner can be the sole source of support for implementing the Strategy. The Collaboration partners expect that, to the extent the Strategy's goals cannot be accomplished under current resources or programs, responsibility will continue to be shared among those who value and currently invest in the preservation and restoration of the Great Lakes.[179]

A summary of the recommendation for aquatic invasive species management demonstrates the regional approach proposed by the GLRC. The Collaboration Strategy recommends that federal, state, and/or local governments enact measures to prevent the spread of invasive species.[180] The Collaboration Strategy prefers a unified federal approach but recognizes that some waters are under state or local jurisdiction, so these waters require state or local legislation.[181] The GLRC also recommends that a Great Lakes Aquatic Invasive Species Integrated Management Program be established in order to coordinate federal, state, and local actions.[182] The Collaboration Strategy proposes that "[o]ne entity should be empowered to coordinate the AIS actions in the Great Lakes."[183] Furthermore, the Great Lakes states and the federal government should cooperate in developing management plans for aquatic invasive species, as well as develop codes of best practices and eco-

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176 *See generally* GLRC, GREAT LAKES REGIONAL COLLABORATION STRATEGY TO RESTORE AND PROTECT THE GREAT LAKES (2005), http://www.glrc.us/documents/strategy/GLRC_Strategy.pdf.

177 *See generally id.*

178 *Id.* at 12.

179 *Id.*

180 *See id.* at 19.

181 *Id.* at 20.

182 *Id.* at 21.

183 *Id.*

nomic incentives.[184] Additionally, federal, state, and tribal agencies should receive support to conduct outreach and education programs.[185]

Adopting an approach for offshore wind projects in the Great Lakes similar to the Collaboration Strategy will allow for the most appropriate regulatory framework for the region. A harmonized regional approach recognizes the importance of federal-state collaboration in order to avoid the "patchwork" regulation problem experienced in the Great Lakes regarding the ballast water issue. This approach also acknowledges the importance of interstate collaboration to allow for a coordinated regime and prevent confusion due to uneven state-by-state regulation. Finally, a harmonized regional approach is most appropriate for offshore wind farm regulation in the Great Lakes because it includes the views of regional stakeholders and wind working groups that have already been considering the siting issues.

CONCLUSION

As development in sustainable energy progresses, the Great Lakes may be the next frontier in offshore wind energy. Offshore wind farm development in the Great Lakes presents a unique situation. The federal, state, and local governments, as well as Great Lakes stakeholders, all have interests in the area. Without a Congressional mandate of permitting authority for the Great Lakes, developers require a regulatory model to decipher the problem of permitting and siting potential offshore wind farms. Accounting for the unique nature of the Great Lakes, a coordinated regional approach will best harmonize federal, state, and local authority and allow for consideration of the concerns of local stakeholders. Adopting an approach similar to the Great Lakes Regional Collaboration Strategy will provide an efficient and integrated framework, bringing the Great Lakes region closer to harnessing clean, inexpensive offshore energy.

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[184] *Id.* at 22. The GLWC has proposed that federal agencies collaborate with the states in performing a Programmatic Environmental Impact Statement for offshore wind in the Great Lakes, which would involve a review of potential environmental issues in wind farm siting, as well as establishing a Great Lakes Wind Energy Development Program. *See* Letter from the Great Lakes Wind Collaborative, to BG John W. Peabody, Commander, Great Lakes and Ohio River Division, U.S. Army Corps of Engineers (June 19, 2009), *available at* http://www.glc.org/energy/wind/pdf/Letter%20to%20Corps_GL%20OWW%20Comp%20Env%20Review_FINAL.pdf.

[185] GREAT LAKES REGIONAL COLLABORATION STRATEGY TO RESTORE AND PROTECT THE GREAT LAKES, *supra* note 176.